

Academic Year/course: 2023/24

## 66703 - Cartography and new technology for land and environmental planning

### Syllabus Information

**Academic year:** 2023/24

**Subject:** 66703 - Cartography and new technology for land and environmental planning

**Faculty / School:** 103 - Facultad de Filosofía y Letras

**Degree:** 328 - Master's in Land and Environmental Planning

**ECTS:** 6.0

**Year:** 1

**Semester:** Annual

**Subject type:**

**Module:**

### 1. General information

Compulsory subject designed for the student to acquire or consolidate the theoretical and practical concepts necessary to use Geographic Information Technologies (GIT) as tools to handle geographic information in the analysis, diagnosis, modelling, visualization and representation of various spatial problems.

These approaches and objectives are aligned with the following Sustainable Development Goals (SDGs):

Goal 5: Gender Equality (Objective 5.a).

Goal 8: Decent work and economic growth (Objectives 8.3, 8.4, 8.9, 8.10).

Goal 9: Industry, innovation and infrastructure (Objectives 9.1, 9.4, 9.a).

### 2. Learning results

Upon completion of this subject, the student will be able to:

Explain what geographic information systems (GIS) are and the principles, concepts and elements of geographic information modelling for its incorporation and management in GIS, describing the analysis functions of this technology.

Explain the conceptual aspects of remote sensing as a tool for geographic analysis, interpret the most common colour compositions, describe the factors responsible for the spectral behaviour of canopies and list its fields of application in relation to land use and physical planning.

Design cartographic documents that are significant for the territorial problems they intend to represent and identify the design process implicit in the most commonly used thematic maps.

Explain and differentiate the organization and structure of at least one GIS software program, compare in a reasoned way the properties and possibilities of the different elements and specific formats of this program and use with skill the basic functions and tools.

Prepare valid cartographic documents for decision making in the field of territorial and environmental planning by means of computer tools, either geographic information systems or automatic mapping programs.

Identify the criteria that allow making territorial decisions based on cartography and evaluate the usefulness and quality of the most common cartographic documents for this purpose.

Develop newly created graphic material for diagnostic and decision making reports integrating the previously mentioned disciplines. This material represents criteria for the analysis and solving of problems related to territorial and environmental planning.

### 3. Syllabus

- GIS.
- Cartography.
- Remote sensing.

### 4. Academic activities

The program offers the students help to achieve the expected results and comprises the following activities:

- Theoretical lectures on the basic contents of the three disciplines (Type 1 Activities).
- Tutored practical sessions: practical exercises (Type 3).

Activity types 1 and 3 are related, since the theoretical foundations that control the resolution must be used to solve the practical exercises.

- Personal study (Type 7).
- Assessment test (Type 8).

### 5. Assessment system

#### FIRST CALL

a) *Continuous assessment system*

Test 1: Written test (36%), including: (1) short theory questions; and (2) open theoretical-practical questions. Assessment criteria: mastery of concepts, ability to relate concepts, relevance of arguments, use of terminology.

Test 2: Practical exercises including:

Practical work on GIS (32%). This practice will be carried out in the program used in class, will refer to the organization of information and the application of basic GIS functions. Assessment criteria: correctness, mastery of concepts, correct use of terminology, formal aspect of the report.

Practical work in groups related to thematic mapping (32%). It will consist of the production and commentary of cartographic material. Assessment criteria: mastery of concepts, correct use of terminology, correctness, adequate justification of choices made.

It will be necessary to obtain a minimum grade of 4 points in the parts in order to average.

b) *Global test*

The exercises and tasks of each test follow the same assessment criteria as those explained in the continuous assessment system.

### **SECOND CALL**

The exercises and tasks of each test follow the same assessment criteria explained in the global assessment system.